A 10-year follow-up study of psychosocial factors affecting couples after infertility treatment†

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BACKGROUND: Little is known about the long-term course taken in life by couples who had undergone medically assisted reproduction (MAR). The aim of this study was to find out in a large sample whether, in comparison with parents, involuntarily childless couples have a different subjective perception of overall and specific quality of life over a period of >10 years.

METHODS: Between 1994 and 1997, 564 couples participated in the initial Heidelberg Fertility Consultation Service study of psychosocial aspects of infertility. In March 2008, a follow-up questionnaire was sent to all of these couples. Both partners were asked about the current status of their desire for a child and their satisfaction with life, their self-esteem, partnership, sexuality and career, as well as their current attitude towards the MAR they had undergone and experience of the process.

RESULTS: The final sample consisted of 148 couples and 60 women (response rate: 41% of the women and 31% of the men contacted). Fifty-nine percent of the women had at least one genetically related child, 11% had a foster or adopted child and 30% remained childless. Comparisons of psychological variables between parents and childless couples were done for the 148 couples only. Post-MAR parents indicated significantly higher self-esteem than childless couples (P < 0.01) and were more inclined to go through the infertility treatment again than childless couples (P < 0.001 for women, P < 0.05 for men). Positive aspects of infertility were seen more often by childless couples than by parents (P < 0.001). Childless women reported more occupational satisfaction than mothers (P < 0.01), while no such difference was identified in the male partners. Concerning overall life satisfaction, satisfaction with friendships and the partnership, and sexual satisfaction there were no statistically significant differences between childless women/men and mothers/fathers.

CONCLUSIONS: Overall, our 10-year follow-up survey indicated good psychological adjustment both in childless couples and in post-MAR parents. A decline of sexual satisfaction in childless couples (often reported in the literature) was not observed in this large sample. Quality of life in the long-term can safely be said to be high, both in the definitively childless couples and the post-MAR parents. These findings should be integrated into the information and counselling for would-be parents prior to infertility treatment. A major limitation of this study is that the majority of women and men from the initial study did not respond in our follow-up study.

Key words: follow-up / psychosocial factors / definitive infertility / quality of life / risk factors

Introduction

Psychological causes of involuntary childlessness are still routinely and substantially overrated (Wischmann, 2003), while the repercussions both of an unfulfilled desire for a child and of medically assisted reproduction (MAR) treatment are often underestimated (Domar et al., 2012). For many women, the intensity of the crisis triggered by involuntary childlessness is approximately equivalent to the effect of a severe illness or the loss of a close relative (Domar et al., 1993; Kerr et al., 1999) and in many cases can lead, at least temporarily, to depression (Verhaak et al., 2007a,b). However, little is known of the effects of involuntary childlessness in the long-term.

All studies of the subject are unanimous that in terms of quality of life and general situation, there are only minor differences between parents and involuntarily childless couples (Strauß et al., 2004; Sydsjø et al., 2005, 2011; Sundby et al., 2007). Prognosis of successful


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adjustment is favourable if the couple (and especially the woman) can accept and give a positive meaning to childlessness, if they engage in an active search for alternatives (‘plan B’) and above all if they do not cut themselves off socially (Lechner et al., 2007). Alternatively, childlessness has a detrimental effect on prognosis if the couple engages in sustained rumination on the causes of childlessness; if they are dominated by feelings of powerlessness and if they adhere to the conviction that children are the only worthwhile aim in life (Verhaak et al., 2007a,b; Kraaij et al., 2008). Most couples report that in the medium and long-term, coping with a childlessness crisis leads to a strengthening of the partnership. From the women’s perspective, facing up jointly to the infertility crisis appears to ‘weld’ the couple together (Repokari et al., 2007). Five to ten years after unsuccessful IVF therapy, the separation rate in these couples lies between 3 and 17%, which is lower than the rate for couples who conceived children naturally (Bryson et al., 2000; Sundby et al., 2007).

Some studies (e.g. Daniluk and Tench, 2007; Wirtberg et al., 2007) report major impairments of the sex lives of involuntary childless couples in the medium and long-term. But it is not clear whether these impairments are caused by involuntary childlessness itself or whether (as in other couples) they are simply a function of having been together for so long (Klusmann, 2002; Wischmann, 2010). Leiblum et al. (1998) compared women with a child after undergoing IVF, women adopting a child after unsuccessful IVF and women remaining childless after unsuccessful IVF treatment with regard to partnership satisfaction, sexual fulfilment and job satisfaction and found no difference between the three groups. Weaver et al. (1997) and Hammarberg et al. (2001) also found that in terms of partnership satisfaction there was no difference between couples and women, respectively, owing their parental status to reproductive medicine and couples (women) that have remained childless.

According to recent findings on gender differences, it seems doubtful whether in the long-term women suffer more from involuntary childlessness than men. One study investigating (i) 154 women and 135 men four to five and a half years after assisted reproduction treatments (ARTs) and (ii) 37 women and 26 men ‘unsuccessfully’ treated for infertility, plus a control group with naturally conceived children, came to the conclusion that the life quality of the men who had remained childless was just as low as that of their female partners (Johansson et al., 2010). The findings of a Finnish study were similar. Here, life quality was lower for the men who had remained infertile than for the fathers but this change in life quality for women was not statistically significant (Klemetti et al., 2010).

So far, no definite statements can be made on the long-term course of involuntary childlessness because of the limitations of existing research. The factors responsible for this are the (usually) small numbers of participants involved in the relevant studies (mostly <100 participants) or short periods for follow-up (mostly <5 years), non-representative samples, contradictory findings and the overall paucity of publications on the subject. A major restrictive factor on the overall validity of the findings is the high rate of non-responders (an average of one-third) and the lack of analyses of non-responders.

Using a large sample, the aim of this study was to find out whether childless couples have a different subjective perception of self-esteem, quality of life, their jobs, their friendships, their partnerships and their sexuality compared with parents, over a period of >10 years.

### Materials and Methods

Between 1994 and 1997, in the framework of the initial Heidelberg Fertility Consultation Service research project, 564 couples with fertility disorders attending the Women’s Hospital, University of Heidelberg, Germany, for the first time were investigated via detailed psychological questionnaires on various psychosocial aspects of the problem (Wischmann et al., 2001). In March 2008, all the couples that had taken part in that initial project were contacted by post and asked to participate in a follow-up investigation via questionnaire (one for each partner), unless during the initial study they had refused further contact. Couples not responding within 4 weeks were sent two further letters at intervals of 4 weeks. The design of this study and the selection of these questionnaires were approved by the Ethics Committee of the Medical Faculty of Heidelberg University.

The follow-up questionnaire was focused on psychosocial factors and was constructed by the authors on the basis of the literature and on the expertise of the first author in infertility counselling (Wischmann et al., 2002, 2009). In this questionnaire, both partners were asked about the current status of their desire for a child and their satisfaction with life, their self-esteem, partnership, sexuality and career, as well as their current attitude towards the infertility treatment they had undergone and experience of the process. We did not ask what kind of infertility treatment the couples had undergone since the initial study. We did ask the parents what kind of treatment preceded the births.

The first part of the questionnaire (for childless couples and parents) revolved around anamnestic details on the overall duration of treatment for involuntary childlessness and on the status of the relationship. If the couple in question had separated, the questionnaire inquired whether there was a new, steady partnership and to what extent the unfulfilled desire for a child had been the reason for separation from the earlier partner. The couples were asked whether they would undergo infertility treatment a second time and whether they could see something positive in being involuntarily childless (see items and grading of the items in Table 1 in the results section). Further, all the couples could use a scale to assess the overall changes in their self-esteem, their general quality of life, their vocational situation, their friendships, their relationship (if still with the same partner) and their sexuality, from termination of infertility treatment to the present day.

The second part of the questionnaire was addressed to couples who had remained childless. They were asked to say whether they still wanted a child and to assess the strength of their present desire for a child and the way the desire for a child had developed over the intervening years. They were also asked to judge the present stress caused by the desire for a child and the way that stress had developed over the intervening years. In their own words, they indicated what had superseded the desire for a child. They were also asked about how they had coped with the unfulfilled desire for a child, individually, as a couple and in contact with others. The subsequent questions inquired into the extent to which others knew about their desire for a child and the degree to which the couple felt supported by people with whom they were personally associated.

The third part of the questionnaire asked the parents how their desire for a child had been fulfilled (medical treatment or adoption/foster parenting) and in what year(s) the child/children were born. Here a distinction was made between twins and triplets. The parents were asked whether they were fully satisfied with the fulfillment of the original desire for a child. In the case of new partnerships, they were asked whether the child was the fruit of this partnership.

The data were evaluated anonymously using the code numbers from the initial project. The statistical analysis was performed using version 9.2 of the SAS Statistics Programme. Depending on the nature of the
Table I Comparison of women and men with fulfilled and unfulfilled desire for a child on psychosocial variables.

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<th>Items (item values)</th>
<th>Women fulfilled DC</th>
<th>Women unfulfilled DC</th>
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| 'I would undergo infertility treatment a second time' (1–4)

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| 'I could see something positive in being involuntarily childless' (0–4)

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| 'After termination of infertility treatment my self-esteem is now . . . (1–5)

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| 'After termination of infertility treatment my quality of life is now . . . (1–5)

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| 'After termination of infertility treatment my job situation is now . . . (1–5)

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| 'After termination of infertility treatment my friendships are now . . . (1–5)

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| 'After termination of infertility treatment my partnership is now . . . (1–5)

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| 'After termination of infertility treatment my sexuality is now . . . (1–5)

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<th>M, mean; SD, standard deviation; DC, desire for a child.</th>
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<td>*Adapted or foster parents excluded from this analysis.</td>
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<td>*1 = definitely not ↔ 4 = definitely.</td>
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<td>*0 = not at all ↔ 4 = definitely.</td>
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<td>*1 = much worse ↔ 5 = much better.</td>
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![Initial study (1994-1997)
564 W, 545 M](image1)

![Potential participants (100%)
512 W, 484 M](image2)

![Follow-up study (2008)
208 W (40.6%), 148 M (30.6%)](image3)

![Participation declined: 28 W (5.5%), 7 M (1.4%)
No answer: 274 W (53.5%), 326 M (67.4%)
Incomplete quest.: 2 W (0.4%), 3 M (0.6%)](image4)

Figure 1 Selection of the sample (W, women; M, men; mo., month; decl., declined; quest., questionnaires).

data, the following tests were used: (i) nominal scale: the \( \chi^2 \) independence test for group comparisons; (ii) ordinal scale: Mann–Whitney U-test for comparisons of two groups, Kruskal–Wallis test for more than two groups and (iii) interval scale: t-test for comparisons of two groups. A value of \( P < 0.05 \) was considered statistically significant.

**Responder/non-responder analysis**

The sample of potential participants consisted of 512 women and 484 men (see Fig. 1). After exclusion of the questionnaires that had not been completed in full, the remaining follow-up sample contained 208 women and 148 men, i.e. 148 couples and 60 women without a partner’s response.

The response rate was 40.6% for women and 30.6% for men. Of the 304 women (59.4%) and 336 men (69.4%) not participating in the follow-up, only 28 women and 7 men declined participation explicitly, the majority of non-responders (274 women and 326 men) did not answer any of our letters, and incomplete questionnaires were sent back from two women and three men.

To assess potential selection and/or non-responder bias, responders were compared with non-responders on parameters recorded in the original study: cause of infertility, age of the couples, graduation level after secondary education, strength of desire for a child, stress caused by desire for a child, degree of life satisfaction, scales of desire for a child, scores on symptom checklist and partnership scales (for a description of the questionnaires, see Wischmann et al., 2001). The outcome of the responder/non-responder analysis: there was no difference in cause of infertility. Responding women and men were better educated than women and men in the non-responder group (data not shown). The score for the factor enhancement of self-esteem (as a criterion for wanting a child) from the first project (example item: ‘I find the idea of being able to create new life wonderful’) was lower in the women who responded from the first project (example item: ‘I find the idea of being able to create new life wonderful’) was lower in the women who responded from the first project (example item: ‘I find the idea of being able to create new life wonderful’).

For the men, the non-responder analysis revealed no significant differences in the variables from the first study referred to earlier. With regard to responses on the subject of suffering from childlessness and...
on the partnership scales, there were no differences between non-responders and the responders, either for women or for men.

Results

Description of the follow-up group

At the time of data evaluation (2008), the average age of the women was 45.6 years (SD = 4.1) and that of the men 47.5 years (SD = 5.4). The average duration of treatment communicated by the 208 women was 31.3 months (SD = 31.4, range 1–180 months). The most frequent common referred to was 12 months.

Comparison of women and men with unfulfilled and fulfilled desire for a child on psychosocial variables

The following evaluations are based solely on the couples’ responses. The 40 women who had remained childless were older than the 91 ‘biological’ mothers (47.8 years as opposed to 44.8 years, \( P < 0.001 \)). Mothers and fathers would be more likely than childless couples to go through the whole treatment process again (\( P < 0.001 \) for women, \( P < 0.05 \) for men; see Table I), regardless of whether they had conceived naturally or after medical treatment (including alternative medicine).

Childless women were better able than mothers to see a positive side to involuntary childlessness (\( P = 0.0001 \)). In the self-assessment category, the self-esteem of the mothers had improved more clearly than that of the childless women (\( P < 0.01 \)). Here the median grade (3 = ‘unchanged’) on the assessment scale was taken as reference. Accordingly, self-esteem had improved in both groups. Subjective quality of life had increased more or less equally in both groups (difference is NS). In comparison with the mothers, the job situation of the childless women had improved (\( P < 0.01 \)). The job situation of the mothers had not changed. Satisfaction with sexuality had remained stable in both groups (NS).

Similar to their female partners, the childless men were also more likely to see something positive in involuntary childlessness than fathers (\( P = 0.0001 \)). A boost in self-esteem was more obvious after fulfillment of the desire for a child compared with remaining childless (\( P < 0.01 \)). Quality of life improved in both groups of men. The job situation in both groups had improved slightly and to largely the same extent. Satisfaction with sexuality had also remained stable in both groups for the men.

Parents’ satisfaction with family size

In this study, 69.2% of the women (\( n = 144 \) out of 208) indicated that their desire for a child had been fulfilled in the previous 10 years (see Fig. 2).

At the time of questioning, the average age of the children was 9.2 years (SD = 2.7; range 1–14 years).

About 17.4% of the mothers (\( n = 25 \)) and 14.8% of the fathers (\( n = 16 \)) stated that they were not fully satisfied although their original desire for a child had been fulfilled. Some of the reasons given were ‘we would have liked a second child’ or ‘our partnership has deteriorated’ or ‘I sometimes feel too old for my children’ or ‘I had to back-peddal on my job because of the children’.

Current desire for children and self-disclosure among childless responders

A large proportion of the women who had remained childless no longer had any desire for a child (\( n = 47 \) out of 62). Parallel to this, there was a decline in the intensity of the desire for a child and the stress caused by involuntary childlessness. Only 3 of the 62 women (4.8%) said that the unfulfilled desire for a child had become stronger over the years. For both men and women, the unfulfilled desire for a child was no longer a burning issue, the median value on a five-grade scale (from 0 = not at all to 4 = definitely still a topic) being 1.21 for women and 0.69 for men.

Women and men responded differently to the question on the extent to which other people knew about their unfulfilled desire for a child. Among the women, the responses ‘many people’ (35.5%, \( n = 22 \) of 62) and ‘few people’ (42%, \( n = 26 \) of 62) were very close to each other, whereas 63% of the men responded with ‘few people’ (\( n = 24 \) of 38). For women, the median value on a four-grade scale [one = (nearly) everyone, two = many people, three = few people, four = no one] was 2.32 and for men 2.63. Both men and women tended to lack support from their personal environment, the median values on a five-grade scale (from zero = not feeling supported at all, to four = definitely feeling supported) being 1.75 for women and 1.53 for men.

Partnership and divorce

Seventeen percent of the women (\( n = 35 \)) had separated from their former partners (those they were with at the time of the initial study). Of these, 57% (\( n = 20 \)) were mothers and 43% (\( n = 15 \)) involuntarily childless women. Fourteen percent of the parents had broken up (\( n = 20 \)), compared with 24% of couples in the group with a still unfulfilled desire for a child (\( n = 15 \); NS).

Alongside the 148 women from couples (i.e. with responses from woman and man), there were a further 60 women without response from a partner. Comparison between these two groups revealed a clear difference in the response to the question of whether the women were still living in a steady relationship with their former partners. Ninety-five percent of the women from couples were still living with their former partner (\( n = 140 \)), while of the women without a response from the partner the figure was only 55% (\( n = 33 \); \( P < 0.0001 \)). To the question whether infertility had been the reason for separation, one out of eight women in the couple group (12.5%)...
and 6 out of 25 (24%) of the unattached women responded in the affirmative.

**Discussion**

Survey procedures addressing such intimate topics as sexual relations and sexual behaviour are generally problematic (Brähler, 1993). The results of such investigations often suffer from the phenomenon of response in accordance with social desirability (Tourangeau and Yan, 2007). As the questionnaires were sent to the couples by post for completion, there is also the possibility that they may have been completed jointly by some couples, thus influencing the information given.

One problem is that approaching the population of couples from the initial ‘Heidelberg Fertility Consultation Service’ project (Wischmann et al., 2001) is tantamount to approaching a selected group. For example, in the initial study, we had an unusually high percentage of couples with idiopathic infertility. This has to be borne in mind before generalizing our findings to all involuntarily childless couples. The same applies to the fact that the measures used in this study were study-specific questions and not standardized questionnaires or interviews.

The response rate for our study was 40.6% of the women and 30.6% of the men, which is low but consistent with other studies of long-term follow-ups (e.g. de la Rochebrochard et al., 2009; Fisher et al., 2010). To assess the non-responder bias, we carried out a non-responder analysis. Responders had a better education than non-responders. Women responding in the follow-up study had a much lower score for the ‘enhancement of self-esteem’ factor as a reason for wanting a child in the initial study. None of the other variables displayed any significant differences. Fisher et al. (2010) point out the likelihood that more parents than permanently childless couples will tend to participate in follow-up inquiries. Although the differences between responders and non-responders appear to be slight, there are indications that non-responders may have had a harder time, whether they are parents or permanently childless. We might surmise that in non-responders the greater importance attached to the ‘enhancement of self-esteem’ function of the desired child (possibly in the sense of narcissistic gratification) made it more difficult for the non-responders to relinquish the desire for a child (in the long-term). We did not inquire whether the participants had undergone psychosocial counselling or psychotherapy in the meantime, so we have no way of knowing whether this has had an impact on the findings of our follow-up study. In summary, the non-responder analysis indicates that there may be a slight selection-bias in the follow-up sample in favour of better-adjusted couples.

A significant number of the previous follow-up studies concentrate exclusively on the state of couples after more invasive medical therapies, such as IVF and ICSI. Our study also encompasses childbirths after natural therapies, acupuncture and homeopathy (in the case of unexplained infertility), in addition to hormone stimulation, intrauterine insemination with the partner’s semen or donor semen and oocyte donation (outside Germany). This means that the outcome of our study might not be fully comparable with the findings of other investigations of couples undergoing solely IVF or ICSI.

In our study, 69.2% of the women became mothers, and they reported that in the interval between the two studies their desire for a child had been fulfilled. Over half of the total of 198 births (51.5%) had been natural and just under a third (29.3%) had been the result of ART, and < 20% after hormone stimulation or alternative medicine. In their follow-up study, de La Rochebrochard et al. (2009) obtained similar success figures: 66% were parents, 40% via IVF and 26% after termination of therapy (with a non-response rate of 49%). In our study, the percentage of women bearing a child by natural conception was comparatively high. Other studies report natural pregnancy figures of 10–15% (Bryson et al., 2000; Sundby et al., 2007). One explanation for this high percentage in our study may be the unusually high rate of couples with idiopathic infertility in our initial study (27%). By comparison, the German IVF register for the year 1998 (DIR, 1999) reported 8.8% idiopathic infertility in couples undergoing ART. This high rate of natural pregnancy over the intervening years underlines the importance of ‘expectant management’ as a treatment strategy for idiopathic infertility (El-Toukhy and Khalaf, 2008; Donckers et al., 2011).

A large proportion of the childless women in our follow-up study (75%) had no further desire for a child. This was paralleled by a decline in the intensity of the desire for a child and in the stress caused by involuntary childlessness. Only 5% of the women said that the unfulfilled desire for a child had become stronger over the years. Most women and men indicated that they had coped successfully with the unfulfilled desire for a child. This agrees with the findings of previous studies to the effect that although infertility was a central topic in the lives of the women involved, in the long-term most of them came to terms with the stress it caused them in the past and cope successfully with the situation. Only a small proportion of couples were unable to accept the fact that they would remain childless (Sundby et al., 2007; Wirberg et al., 2007). On the other hand, our findings contradict the outcomes of various other studies suggesting that in involuntarily childless women infertility is associated with considerable long-term psychological stress (Bryson et al., 2000; Beyer et al., 2004). Though Bryson et al. (2000) identified increased psychological stress in involuntarily childless women compared with women who had become mothers after infertility treatment, they did not differ from the general population. This suggests that mothers were feeling better than childless women but childless women’s scores were still in the normal range. This finding has practical implications for infertility counselling in reconsidering a ‘child-free’ life.

More women than men had told others about their unfulfilled desire for a child. This agrees with the findings of most studies to the effect that infertile women are more likely to go in search of social support than their partners (Koydemir-Ozden, 2010; Peterson et al., 2011).

Seventeen percent of the responding women had separated from their original partners in the interval between the two studies. This rate is less than in the general population (with about 25–30% separation rate). Those still with their original partners assessed the quality of their partnerships as relatively constant with a slight tendency to improvement. The quality of their sexual relations was much the same. The statements in the literature on satisfaction with partnership and sexuality are controversial. Our findings confirm those studies that report consistent quality in partnership and sexuality (e.g. Weaver et al., 1997; Leiblum et al., 1998; Hammarberg et al., 2001; Sundby et al., 2007), which is also an important issue for counselling on the long-term implications of infertility.
Parents would be more inclined to undergo infertility treatment a second time than couples without children. This outcome is plausible and confirms the findings from earlier research. Women who had remained childless were more critical of the care they had been given during treatment and more negative about their experiences with the treatment but they did not regret undergoing it (Hammarberg et al., 2001). Couples whose treatment had been unsuccessful felt less well supported by the medical staff and were more dissatisfied with the treatment itself (Weaver et al., 1997). In the study by Schmidt et al. (2003), satisfaction with medical and psychosocial care was also positively associated with pregnancy or birth after treatment.

Childless women and men were definitely more likely to see a positive side to involuntary childlessness than mothers and fathers. This outcome is also plausible and confirms the findings produced by Sundby (1992) and Weaver et al. (1997) indicating that positive re-framing may help individuals/couples cope with that treatment outcome. This finding underlines the importance of meaning-based coping strategies for successful coping (Peterson et al., 2011).

Subjectively, the feeling of self-esteem was more enhanced in mothers compared with women without children but overall self-esteem was enhanced in both groups. These findings can be interpreted as an indicator of successful adaptation in the long-term for both groups of women, but more favourable for mothers than for childless women. Enhancement of self-esteem in men whose desire for a child had been fulfilled was more appreciable than in those where this was not the case. This means that we were only able in part to confirm the findings of van Balen and Trimbos-Kemper (1994) and Wirberg et al. (2007), who reported lower self-esteem and self-confidence in some of their women participants two and 20 years after unsuccessful infertility treatment, respectively. Otherwise, an enhancement of self-confidence in childless responders was also reported by Bryson et al. (2000) who even found that 10 years after unsuccessful IVF the childless responders assessed themselves as more self-confident in comparison with the general population. Daniluk and Tench (2007) also established that 3 years after the termination of treatment, couples that had remained childless after therapy displayed an enhancement of self-esteem.

Overall quality of life had improved to more or less the same degree for the women in both groups. This was only a partial confirmation of the findings produced by earlier studies. These studies reported that one and a half to 3 years after treatment, men and women with one or more children as a result of IVF were more satisfied than men and women who had undergone therapy which had been unsuccessful, although the childless responders were not dissatisfied (Glover et al., 1996; Leiblum et al., 1998; Hammarberg et al., 2001). Weaver et al. (1997) established that there were no differences in quality of life between parents who had undergone ART and the general population. In contrast to our results, the study by Johansson et al. (2010) reports a reduction in quality of life four and a half to 5 years after unsuccessful IVF treatment, notably in involuntarily childless men.

The childless women in our study appear to have achieved greater self-realisation in their jobs than the mothers. Wirberg et al. (2007) describe commitment to work as a helpful factor in coping with childlessness. In contrast, Leiblum et al. (1998) found no difference in job satisfaction between women who had adopted a child after unsuccessful IVF and women who had remained childless after IVF. However, an above-average degree of job satisfaction was observable in all the three groups. In men, fulfilment or non-fulfilment of the desire for a child appears to have no influence on their careers. In summary, our findings can reassure infertile women and men that the long-term psychosocial implications of involuntary childlessness do not affect overall quality of life but it may still have a negative impact on the self-esteem of both partners.

Our 10-year follow-up study investigated the long-term course of developments in couples that had remained childless after (reproductive) medical treatment in comparison with those who had become parents. One major strength of our study is the large sample size—including both partners of the couple—despite the long time span of 10–14 years since the initial study took place. Another major strength is the carefully examined non-responder bias based on a manifold of psychosocial variables measured in the initial study. The study shows that both involuntarily childless couples and couples with children are well able to cope successfully with their situation from their subjective point of view. The study was unable to confirm the impairment of sexual satisfaction frequently described in the literature. We cannot, however, rule out the eventuality that there were no couples with reduced quality of life (also in connection with sexuality) taking part in our study, as the majority of women and men from the initial study did not respond in our follow-up study. There are slight indications that things may have been more difficult for the non-responding women, since they reported greater importance of motherhood in relation to their self-esteem in the initial study, compared with the responding women. Altogether, however, long-term quality of life can be considered high both in the couples that have remained childless and in parents more than 10 years after infertility treatment. If these findings could be confirmed in future studies with higher response rates, they should be incorporated into the information given to couples prior to infertility treatment. Future research on long-term involuntary childlessness should engage with the problem of the high proportion of non-responders (e.g. in the form of prospective studies of representative samples in personal interviews and not with anonymous questionnaires). These studies should primarily attempt to identify the coping resources for the couples affected.

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Authors’ roles

T.W. and K.K. contributed to study design, conception of article, analysis of data, drafting the article and final approval of the version to be published. H.S. involved in analysis of data, drafting the article and final approval of the version to be published. T.S. and R.V. involved in conception of article, drafting the article and final approval of the version to be published.

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